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# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

### Division of Oil, Gas and Mining

JOHN R. BAZA  
Division Director

September 22, 2016

Rusty Bastian  
Redmond Minerals, Inc.  
6005 North 100 West  
Redmond, Utah 84652

Subject: Conditional Approval of Amended Text of the Notice of Intention to Commence Large Mining Operations, Redmond Minerals Inc., Redmond Minerals Mine, M/039/0002, Sanpete County, Utah

Dear Mr. Bastian:

The Division of Oil, Gas and Mining has reviewed the amended Notice of Intention to Commence Large Mining Operations (Notice), received July 13, 2016. The text of the re-written and updated Notice of Intent is complete, and the Division approves the text of the amended Notice, **conditional upon the receipt of the signature page, signed by an authorized officer.**

The Division accepts the maps for the Notice but does not yet approve the maps as a whole, since some inconsistencies and errors remain, as documented in the enclosed comments. These map comments will need to be addressed, consistent with R647-4-105, before the Division issues final approval of the amended Notice. Final map changes will be required at the time of the next periodic plan and reclamation cost estimate review (September 2019).

In the absence of definitive information about groundwater in the area, the Division considers the groundwater impacts section to be acceptable but will continue to evaluate groundwater impacts during future Notice reviews and as more information becomes available.

**You are now directed to provide an updated reclamation cost estimate by November 15, 2016.**

The attached comments concerning the reclamation cost estimate and maps are listed under the applicable Minerals Rule heading; please format your response in a similar fashion. Upon final approval, the Notice will be stamped approved, and a copy will be returned for your records.

Only one copy of the complete Notice text was provided to the Division. Please provide another hard copy of the text. The Division will stamp this copy approved and return it to you.

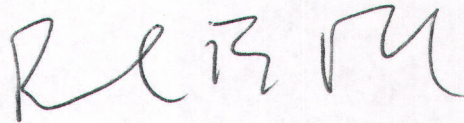




Second Review  
Page 2 of 8  
M/039/0002  
September 22, 2016

The Division will suspend further review of the Notice calculations and maps until receiving your response to this letter. If you have any questions in this regard please contact Peter Brinton at 801-538-5258 or me at 801-538-5261. Thank you for your cooperation in completing this permitting action.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. B. Baker', with a stylized flourish at the end.

Paul B. Baker  
Minerals Program Manager

PBB: pnb: eb  
Attachment: Review  
cc: Mike Forbush, Redmond Minerals Inc. (mikef@redmondminerals.com)  
Scott Olsen, Sanpete County (solsen@sanpetecounty-ut.gov)  
P:\GROUPS\MINERALS\WP\M039-Sanpete\M0390002-SouthRcsSalt\final\APVL-7459-09202016.docx



**REVIEW OF NOTICE OF INTENTION  
TO COMMENCE LARGE MINING OPERATIONS  
Redmond Minerals Inc.  
Redmond Minerals Mine  
M/039/0002  
September 21, 2016**

**R647-4-113 – Surety**

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
1	Total Reclamation Cost Summary, Omission	<u>Previous Comment 51:</u> Please provide the Division's reclamation cost calculation summary spreadsheet (total.xls) to report the total 2014 reclamation cost, escalated to 2019 dollars, which is used to determine the bond amount.  <u>Current Comment:</u> Previous comment not yet addressed.	pnb	
2	Omission	<u>Previous Comment 11:</u> Other cost information will need to be added, such as ...pipe closure/removal, vent shaft plugging, and the construction of the raised berm for drainage containment.  <u>Previous Comment 52:</u> Not addressed. Add these costs as line items to the calculation.  <u>Current Comment:</u> Previous comment not yet addressed.	pnb	
3	Omission	<u>Previous Comment 53:</u> Explain the assumption behind the application of major regrading volumes using a dozer and excavator at a ratio of 70/30, respectively.  <u>Current Comment:</u> Previous comment not yet addressed.	pnb	
4	D9 Dozer Production Sheets	<u>Previous Comment 54:</u> Define Major Regrading and Minor Regrading, and the source and method used to determine regrade volumes.  <u>Current Comment:</u> Previous comment not yet addressed.	pnb	
5	Earthwork Costs, Omission	<u>Previous Comment 55:</u> Costs to regrade major volumes appear incomplete. Identify additional major volumes shown on the map, but not included in the table. Major regrading volumes are not specifically identified for OW-01, OW-02, OW-03, OW-04, OW-05, OW-10, OW-16, OW-17, OW-17A, and OW-18. Identify MC-a and MC-b in the table from the Salt Processing area. Major regrading for Area 12 (A12-a) is understated, and removal of the berm alone will be more than 136 cubic yards.  <u>Current Comment:</u> Previous comment not yet addressed.	pnb	
6	Earthwork Costs, Duplicate	<u>Previous Comment 56:</u> It appears that Area 10 or ... Area 14 regrading costs have been duplicated on the unnumbered, unnamed cost calculation page with regrading for Areas 11-13. Remove the Area 10 line items from this page and the total direct costs.  <u>Current Comment:</u> Previous comment not yet addressed.	pnb	
7	Demolition Costs, Omission	<u>Previous Comment 57:</u> Consistent with 1999 Notice..., Buildings 7-15 and Buildings 16, 17, 22, and 23 need to be demolished and/or removed. Add demolition costs for these buildings, and update the total reclamation cost estimate amount.  <u>Current Comment:</u> Previous comment not yet addressed.	pnb	



### MAP COMMENTS

To be addressed either by 2019 or during the next substantive amendment.

#### R647-4-105 - Maps, Drawings & Photographs

##### General Map Comments

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
58	All sheets	<i>Previous comment - Please leave a one-half inch border around all sheets, for scanning purposes as was done for SS-01 and RT-01.</i>	lah	
		<i>Previous comment – Submittal dated April 25, 2016 did not have the maps which were referred to, this comment to remain for the submittal received on May 19, 2016</i>	lah	
		<i>Previous Comment – This is an engineering standard and not necessary for approval, but this can generate questions when people review documents that are not legible.</i>	lah	
		New comment August 11, 2016 – As noted above from PNB, the review comment will be reviewed in 2019	lah	
59	General	Update all applicable maps to be consistent with future plans, such as the proposed office building at the clay mill, the solar panel areas and associated infrastructure on past disturbances, both new and regraded roads (e.g. new haul road north of South Salt Mine), and both recent and ongoing reclamation and disturbance (e.g. Bosshardt mine backfill grading).	pnb	

##### 105.2 - Surface facilities map

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
60 (Previous comment 9)	Site Facilities Map	Please provide a map with an aerial photo background, as was submitted previously.  <u>Second Review:</u> Not addressed. The most recent aerial photograph will be adequate, as long as the date of the flyover is clear.	pnb	
61 (Previous comment 11)	Site Facilities Map, etc.	Identify the current overburden piles with topsoil storage (per 106.5 and 106.6), including topsoil storage piles associated with future mining. Refer to comments for sections 106.5 & 106.6. If no topsoil has been stockpiled to this point, note the map.  <u>Second Review:</u> Not addressed. Identify future soil stockpiles associated with future surface mining areas.	pnb	
62 (Previous comment 13)	Site Facilities Map, etc.	Unless they no longer exist, identify additional road segments on the map, as per Comment 14 in the previous review, and revise the reclamation treatments map and bond as needed. Examples observed in aerial photographs include: 1) roads in the area of Trash Pit #4, 2) roads near the retention ponds north of the clay mill, 3) a road north of the unnamed open pit salt mine near the subsidence areas, and 4) roads between the future clay mine and OW-12 northeast from the access road. Other examples may exist. Any onsite, pre-law roads not used for mining activities should be identified as such.  <u>Second Review:</u> Not addressed.	pnb	



Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
63 (Previous comment 17)	Site Facilities Map, etc	Aerial photos suggest that the three clay pits at the far northwest end of the disturbance are really one clay pit. Correct as needed.  <u>Second Review:</u> Show regrading of High Yield Clay Mine and other regraded areas.	pnb	
64	Site Facilities Map, etc	Identify the Tamarack Pit as current mining (and any other pits that were identified as future mining are currently being mined).	pnb	
65 (Previous comment 23)	Site Facilities Map, etc	Identify reclaimed areas on this map.  <u>Second Review:</u> Not addressed.	pnb	
66 (Previous comment 27)	Site Facilities Detail Map & Most Other Maps	The two tables on the Site Facilities Detail Map incorrectly identify some facilities (Buildings 7-15) as pre-1999, and at least infer that Buildings 7-15 and Buildings 16, 17, 22, and 23 do not need reclamation. Clarify the tables, legend, and facilities on the map to be consistent with an updated reclamation treatments map and the 1999 approval requiring that these buildings be reclaimed.	pnb	
67 (Previous comment 28)	Site Facilities Detail Map	Label storage tanks for brine, fuel, and other potentially deleterious substances.  <u>Second Review:</u> Not addressed.	pnb	
68 (Previous comment 27)	Site Facilities Detail Map	Identify the building just north of the actual north mill building below the hill, and the scale.  <u>Second Review:</u> Not addressed. See the aerial photographs.	pnb	
69	Site Facilities Detail Map	The 2014 aerial photographs show the equipment storage area as being larger than is drawn on the map. Correct the map as needed.	pnb	

### 105.3 - Drawings or Cross Sections (slopes, roads, pads, etc.)

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
70 (Previous comment 29)	Page 4	Identify by name and number the other maps included with this Notice.  <u>Second Review:</u> Not addressed. Usually this is done in a table of contents.	pnb	
71 (Previous comment 32)	Hydro Map, etc	Identify what has been described as a spring in the reclamation area above the salt water and runoff retention pond.  <u>Second Review:</u> Not addressed.	pnb	
72 (Previous comment 33)	Hydro Map, etc	Per comment 23 of the previous review, identify ... the retention pond in the drainage northwest of the unnamed northwest clay pit, ...the pond northeast of the mill below the two drainages near the property line, and any other ponds not already shown.  <u>Second Review:</u> Not fully addressed. Deleted portions were addressed.	pnb	



Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
73 (Previous comment 35)	Hydro Map, etc	Per comment 27 of the previous review, identify ...less visible drainage paths (such as a path to the northern retention ponds by the property boundary)...	pnb	
		<u>Second Review:</u> Not completely addressed. Identify the defined flow path visible on aerial photos that enters the southern regraded area from the southwest.		
74	Hydro Map	Add the salt structure elevation lines to the legend, with any other that might be cut off.	pnb	
75 (Previous comment 36)	Hydro Detail Map	Add a legend.	pnb	
		<u>Second Review:</u> Not addressed. Show salt structure elevation lines in the legend.		
76	Reclamation Treatment Map	Major regrading volumes are not specifically identified for OW-01, OW-02, OW-03, OW-04, OW-05, OW-10, OW-16, OW-17, OW-17A, OW-18. Update the table. The calculations will also need to be updated accordingly.  Identify MC-a and MC-b in the table from the Salt Processing area.	pnb	
77	Reclamation Treatment Map	The 1999 Notice approval documents identify only the following facilities as having post-mining land use and not requiring reclamation (demolition and removal): <ol style="list-style-type: none"> <li>1) the maintenance shop (diesel equipment shop, #18),</li> <li>2) office/warehouse facilities (salt warehouse/office, #19),</li> <li>3) clay mill (clay mill/warehouse building, #20),</li> <li>4) the salt mill (mill enclosure, #21), including secondary crushers,</li> <li>5) the vehicles storage (pre-1999 parking lot, not numbered),</li> <li>6) salt bulk storage (pre-1999, not numbered),</li> <li>7) truck scales (pre-1999, not numbered), and</li> <li>8) main roads to facilities with a post-mining land use.</li> </ol> This Reclamation Treatments Map does not indicate that the other Buildings 7-17, 22, and 23 need reclamation. Correct the map and legend, consistent with the 1999 approval.  <u>August 17, 2016 Addendum:</u> The roads to remain after mining are also not identified.	pnb	
78 (Previous Comment 37)	Reclamation Treatments Map	Referencing the 1999 Treatments map, OW-03 (north of the north salt mine) appears to be post-law dumps or waste salt, and OW-10 and OW-11 appear to be pre-law dumps. Unless this is a mistake, correct the new map to show OW-3 as requiring reclamation.  <u>Second Review:</u> Not addressed. OW-03 is prelaw.	pnb	
79 (Previous Comment 44)	Reclamation Treatments Map	Please address comment 40 from the previous review: "...The Notice text should discuss berms for drainage control (including reclamation), and maps should be consistent with the text. (105.3.17)"  <u>Second Review:</u> Not completely addressed. Show important reclamation berms.	pnb	
80 (Previous Comment 45)	Revegetation Treatment Map	In the map legend, explain each of the revegetation treatment types (topsoil amount, seeding, type of surface roughening, addition of composted manure, flooding, clay/salt areas).  <u>Second Review:</u> Not completely addressed. Indicate which treatment types are for salt, salt waste, clay, clay waste, etc.	pnb	



Second Review  
Page 7 of 8  
M/039/0002  
September 22, 2016

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
81 (Previous Comment 48)	Revegetation Treatment Map	In the legend, the "Previously Reclaimed" category should report ... that you are waiting for vegetation to grow.  <u>Second Review:</u> Partly addressed. Note that the Legend requires six inches of soil as well as composted manure placed to be placed on "Previously Reclaimed" areas. Under the current Notice, multiple regraded clay areas would need to be seeded, but not have soil placed on them. Correct the inconsistency. Indicate whether the areas have been seeded.	pnb	
82	Cross Sections	The cross-sections indicate that the pits previously granted variances will be backfilled and/or graded down to shallower slopes. However, page 17 (section 110.2) indicates that highwalls at the entrances of north and south will not be backfilled. The outdated plan identifies backfilling to reduce slopes of salt mines, except in the immediate area of the portals where a variance was approved. Please modify the text and maps for consistency.	pnb	
84	GE-01	<i>Change title in legend from Soil Classification to Geologic Legend.</i>  <i>Previous comment – Submittal dated April 25, 2016 did not have the maps which were referred to, this comment to remain for the submittal received on May 19, 2016</i>  <i>Previous comment – Change title in legend from Soil Classification to Geologic Legend.</i>  New comment August 11, 2016 – As noted above from PNB , the review comment will be reviewed in 2019	lah lah lah lah	
86	HD-03	Show the retention pond south of the mill near the solar panels.	pnb	
87	HD	Identify any areas with workings less than 60 feet in depth below the surface, including pit bottoms. Reference the rock mechanics report for crown pillar stability.	pnb	
88	Omission	<i>Include a note on CS-01, CS-02 and CS-03 that the locations of Section A thru Q for location of cross sections on plan view.</i>  <i>Previous Comment – Submittal dated April 25, 2016 did not have the maps which were referred to, this comment to remain for the submittal received on May 19, 2016</i>  <i>Previous comment - Please show the locations of the Sections a thru Q on one of the plan view maps</i>  New comment August 11, 2016 – As noted above from PNB , the review comment will be reviewed in 2019	lah lah lah lah	



Second Review  
Page 8 of 8  
M/039/0002  
September 22, 2016

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
89	CS-01, CS-02, CS-03	<p><i>Label regraded slope angles with maximum slope angles, i.e. "2H:1V max," or add a note to each sheet that states, "Regraded slope angle not to exceed 2H:1V."</i></p> <p><i>Previous comment – Submittal dated April 25, 2016 did not have the maps which were referred to, this comment to remain for the submittal received on May 19, 2016</i></p> <p><i>Previous comment – No new CS sheets have been submitted, but from NOI the CS sheets dated – February 02, 2015 have not been corrected please add a note on each sheet - "Regraded slope angle not to exceed 2H:1V." This does not need to be done by CADD, but can simply be done with an ink pen, before stamped approved by the Division.</i></p> <p><i>New comment August 11, 2016 – As noted above from PNB, the review comment will be reviewed in 2019</i></p>	lah  lah  lah	
90	Omission	Show the past and future locations of buried waste salt, since it is considered deleterious to plant growth.	pnb	

#### 105.5 – Underground and Surface Mine Development Maps

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
91 (Previous Comment 50)	Underground	Show the Bosshard Mine underground workings, including in the area of the closed vent shaft and near the mill. Indicate the elevations of the workings, if possible.	pnb	